

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-021593**Date Inspected:** 21-Feb-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1900**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Mr. Xu Le Feng.**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower and Orthotropic Box Girder (OBG)**Summary of Items Observed:**

On this day CALTRANS OSM Quality Assurance (QA) Inspector Shailesh Gaikwad was present during the times noted above for observations relative to the fabrication of the SAS Superstructure being performed by Zhenhua Port Machinery Company (ZPMC) at Changxing Island in Shanghai, China. QA observed and/or found the following:

This QA Inspector observed the following work in progress:

**BAY 10: SMAW Process:**

This QA Inspector observed ZPMC qualified welding personnel identified as 053829, 500363, Perform Shielded Metal Arc Welding (SMAW) on OBG Bike path deck plate pipe joint. Joint identified as BK004A3-031-073, 064. ZPMC CWI Identified as Guo Yan Fei. The welding parameters as measured using QC's calibrated instrument appeared to be in general compliance with WPS-B-P-2112.

**Repair welding, SMAW Process:**

This QA Inspector observed ZPMC qualified welding personnel identified as 052930, Perform Shielded Metal Arc Welding (SMAW) on OBG Bike path stringer plate. Plate identified as BK010A-001 (30A) the joint was welded before but at wrong location so that weld gouge out and re welded again. ZPMC QC Identified as Li Peng Fei with temporary welding repair report WRR-B-WR16925. The welding parameters as measured using QC's calibrated instrument appeared to be in general compliance with WPS-345-SMAW-2G (2F) Repair.

**FCAW Process:**

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This QA Inspector observed ZPMC qualified welding personnel identified as 052075, Perform Flux Core Arc Welding (FCAW) on OBG Bike path deck plate to stringer plate. Joint identified as BK009A4-001-019, 020. ZPMC CWI Identified as Guo Yan Fei. The welding parameters as measured using QC's calibrated instrument appeared to be in general compliance with WPS-B-T-2132-ESAB.

### Heat Straightening:

This QA Inspector observed ZPMC personnel performing heat straightening on OBG Traveler rail beam, the traveler rail identified as TR 3005TR1, TR2, TR3, maximum deformation observed 15mm. ZPMC QC identified as Yun Chun Fang with Heat straightening report HSR1(B)-10101.

### BAY 11,

#### SMAW Process:

This QA Inspector observed ZPMC qualified welding personnel identified as 040655, Perform Shielded Metal Arc Welding (SMAW) on OBG Bike path. Joint identified as BK008A3-002-065, 067, 068, 064. ZPMC QC Identified as Wang Ching Xin. The welding parameters as measured using QC's calibrated instrument appeared to be in general compliance with WPS-B-P-2112.

### Magnetic Particle Testing:

This QA Inspector observed ZPMC Magnetic Particle Testing Inspector, performing MT on OBG Bike path sole plate joint. Bike Path identified as BK004A-064, BK004A-057, BK004C-024, BK005A-003.

### BAY 10:

During the Quality Assurance (QA) random in process observations of the fabrication of Orthotropic Box Girder (OBG) Bike Path (BK) BK004A-031, this Quality Assurance Inspector (QA) discovered the following issue: ZPMC has changed the joint design from fillet to Complete Joint Penetration (CJP) without the Engineers approval. The change to CJP is due to the root openings exceeding the 5mm tolerance. The CJP welding was performed without using of steel backing bar. The joint design for the changed CJP weld was single bevel no back gouging weld. ZPMC personnel were using Submittal 200-R2 to perform CJP weld. Y Location for the changed CJP welds from BKPL6A are,

- 0mm~1500mm, 3050mm~3550mm and 6520mm~9020mm for BK004A2-031-013.
- 0mm~2000mm for BK004A2-031-021.

The fillet weld number observed # BK004A2-031-013, 021. The changed CJP weld number is identified as BK004A2-031-024, and BK004A2-031-022, 023, 025. The material is A709 Grade 345 Non Seismic Performance Critical Member (Non SPCM). The approved drawings, BK004A, specify fillet welds at these locations. The OBG Bike Path as located in Sub assembly Bay # 10, This QA Inspector generated incident report on this date. For further information, please see the attached pictures.

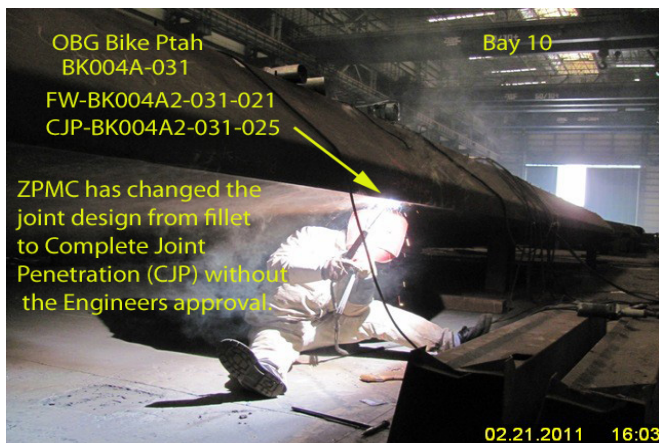
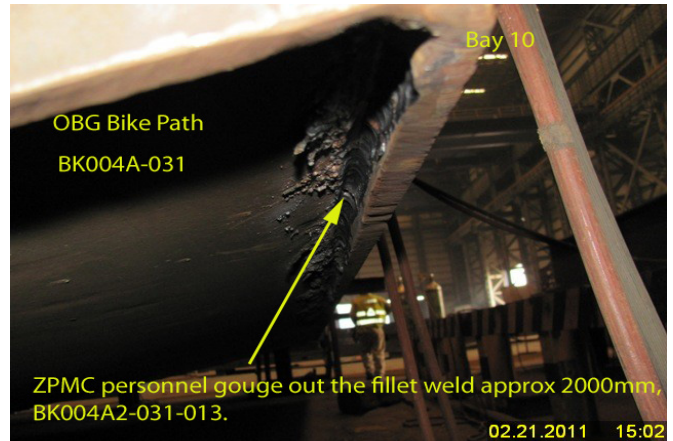
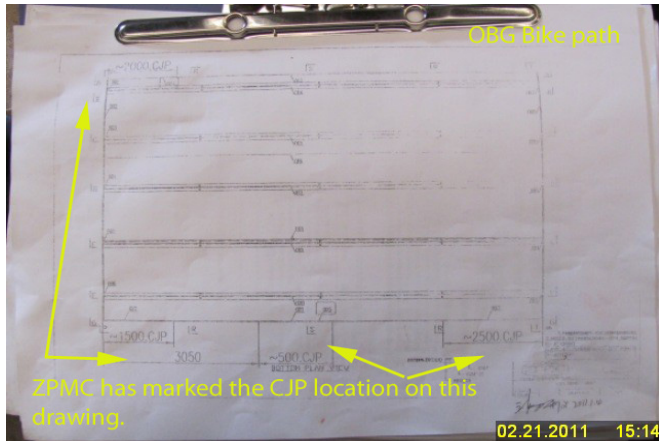
Unless otherwise noted, all work observed on this date appeared to be in general compliance with the applicable contract documents.

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## Summary of Conversations:

Only general conversation was held between QA and QC concerning this project.

## Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Thomas Ho: 150002048250, who represents the Office of Structural Materials for your project.

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**Inspected By:** Gaikwad,Shailesh

Quality Assurance Inspector

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**Reviewed By:** Clifford,William

QA Reviewer